**FACULTY OF SCIENCE**

**DEPARTMENT OF ZOOLOGY**

**MODULE ZOO 1B10**
**ANIMAL DIVERSITY**
**CAMPUS APK**
**NOVEMBER 2015 EXAMINATION**

**DATE 7 NOVEMBER 2015** **SESSION 12.30**

**ASSESSOR(S)** **DR L MOKAE**
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**INTERNAL MODERATOR** **DR F DURAND**

**DURATION: 3HOURS** **MARKS: 130**

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**NUMBER OF PAGES: 3 PAGES**

**INSTRUCTIONS:**

1. **ANSWER ALL THE QUESTIONS**
2. **KEEP PARTS OF THE SAME QUESTION TOGETHER (in one page)**
3. **HAND IN BOTH EXAM PAPER AND ANSWER SHEET**

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**QUESTION 1** **[10]**

**Define the following terms**:

1.1 Typhlosole
1.2 Ctenidia
1.3 Hypothesis
1.4 Meroblastic
1.5 Coeloblastula
1.6 Protonephridia
1.7 Binomial nomenclature
1.8 Saprophagous
1.9 Cladists
1.10 Neotenine

**QUESTION 2** **[15]**

Use labelled illustrations to discuss the embryological development of the **zygote up to the gastrula** stage. Label all the developmental stages and the changes occurring in each stage. Use specific colours to indicate the different germ layers.

**QUESTION 3** **[15]**

3.1 Compare and discuss four **(4)** differences in protostome and deuterostome organisms. (4)
3.2 List four **(4**) advantages of coelom development. (4)
3.3 Name three **(3)** different types of symmetry in animals and give an example of each. (3)
3.4 List four **(4)** species concepts and indicate what each entails. (4)

**QUETSION 4** **[15]**

4.1 Draw a labelled cross section of the **flatworm** and include all structures seen in this cross section. (11)
4.2 Write down the classification (phylum, class, order and genus) to which the flatworm belongs and indicate why you placed the flatworm in the different taxa. (8 x ½ = 4)

**QUESTION 5** **[21]**

The following questions are about the nematodes:

5.1 Draw a cross section through a nematode.
5.2 Number all the structures visible in the above-mentioned cross section. (14)
5.3 Draw a table consisting of four (4) columns. Label each column as follows:
Column 1= numbers, 2 = structure, 3 = derivative and 4 = function. (14 x ½=7)
5.4 Write down the numbers indicated in 5.2 above. Complete the rest of the table/columns

**QUESTION 6** **[6]**

Discuss, using labelled diagrams, the possible origin of the blood vascular system in Eucoelomates.

**QUESTION 7** **[20]**

Onychophorans share many characteristics (structures) with both the Annelids and Arthropods and have therefore been regarded as the missing link between the two phyla.
Discuss this statement by means of a **labelled illustration** of a cross-section through an Onychophoran. List all the structures visible in the cross section and those not seen on the cross section.

**QUESTION 8** **[15]**

There are three (3) insect orders with piercing-sucking mouthparts that were discussed in class. List (classify) all three (3) **orders** that have this type of mouthpart. Indicate the similarities and differences, as well as the feeding mechanisms found in these groups.

**QUESTION 9** **[13]**

9.1 The presence of a water vascular system is unique to Echinoderms. Describe, with labelled diagrams the water vascular system of the asteroids. (9)

9.3 List four (**4**) unique characteristics of members of Phylum Chordata. (4)

**TOTAL 130**